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Very important
re: fluted folsoms

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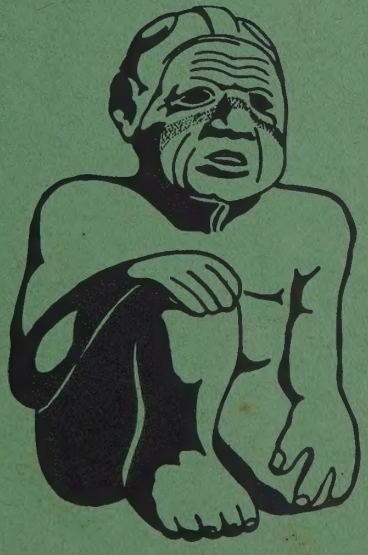

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TENNESSEE ARCHAEOLOGIST

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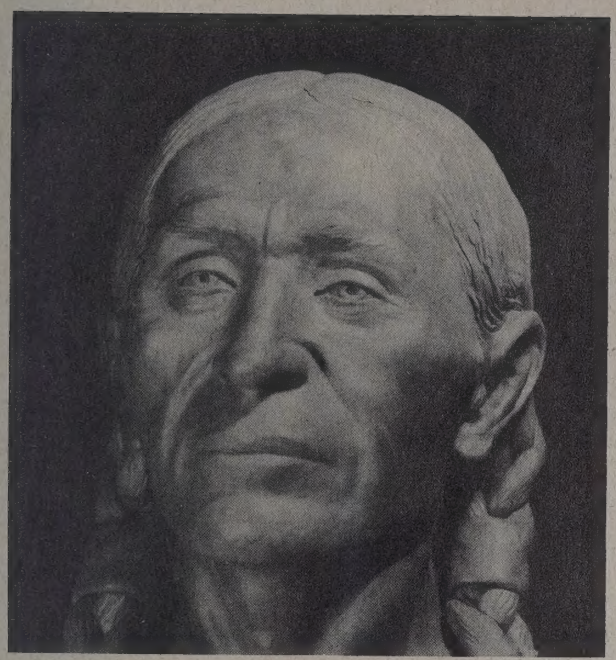
AN ARCHAIC AUTOBIOGRAPHY*



I was an Eva warrior. Thousands of years ago I lived in a small village beside the Tennessee River, not far from the place where the Big Sandy River flows into it. My village, one of many settlements of my tribe whose territories extended far up stream from the mouth of the Tennessee, was the place where I was born and spent all of my life. There, also, my children and my children's children lived out their days for unnumbered generations.

It was a good land where a man nearly always brought home enough red meat to fill the bellies of his family. If game was scarce, the other men and I went fishing or gathered clams in the shallow shoals nearby. Our wives and children also provided food. They found many kinds in the woods, and according to the season, carried home basket loads of seeds, nuts and fruits which we stored for winter use.

No person could afford to be idle in our days because we had to make everything we used or wore. Men had to make their own hunting gear and fishing tackle, as well as most of the kitchen equipment and other gadgets for the women.

Because we were hunters, our most important possessions were our spears and spear throwers, but in order to make them, we first had to contrive a set of tools. About the time I became old enough to hunt with the men, instead of staying with my mother and the other women and children, I was taught how to make these tools out of flint, wood and antler. After a little practice and a few cut and mashed fingers I finally mastered the trick of shaping flint into knives and spear points with a pebble for a hammer. It was harder to learn to do the finishing touches, especially to chip the edge by pressing on it with a tip of antler. However, in

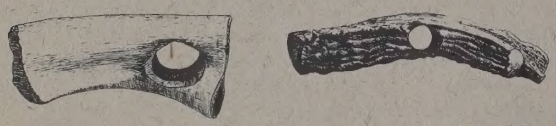
Scale 1/3

time I was able to make fine big spear heads with notches at the bottom or at the sides, in accord with the traditional style of my tribe. I also

*This is the first of a series of imaginary autobiographies (written by the editors) describing briefly the different prehistoric Indian peoples of the Tennessee area. Members of the Tennessee Archaeological Society will be able to assign certain objects in their collections to the peoples who made them by studying the descriptions and illustrations. The features of the Eva hunter are moulded in clay over his skull in accordance with average tissue thicknesses at various points on the human face. Details are based upon Indian faces of similar type.

learned to chip out drill points whose sharp edges could bore through soft stone, antler and wood. These were long and slender, often four or five inches in length. They were a specialty of my tribe, although we had other methods for boring holes which I will explain later after describing how our spears were made.

These weapons were used mainly for killing game such as bears and deer, so most of them had to be quite large and heavy. The wooden shaft was important; it had to be straight if it was to fly true to the mark. The device I used for straightening the wood was a heavy piece of antler with a hole



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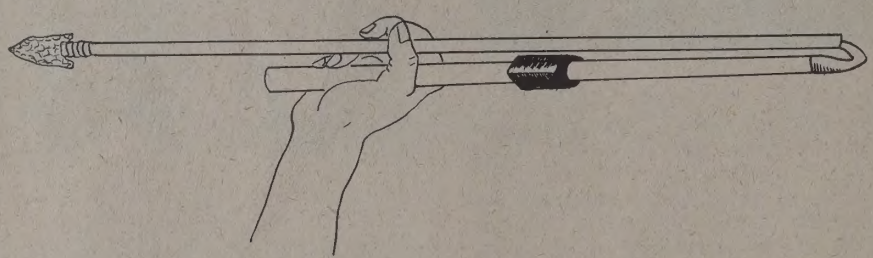
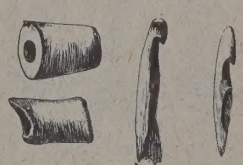
drilled in it. By heating the stick and passing it back and forth through the hole, I gradually wrenched it straight. In the butt end of the shaft I cut a shallow socket to fit the spur or hook of my spear thrower.



A man's spear thrower was like a part of his body, an extra extension of his arm. No matter how fine and straight his spears were, they could not bring down the game unless his thrower gave them the needed force. This weapon was a wooden rod nearly as long as a man's arm. At one end was a hook, often carved from deer antler, which fitted



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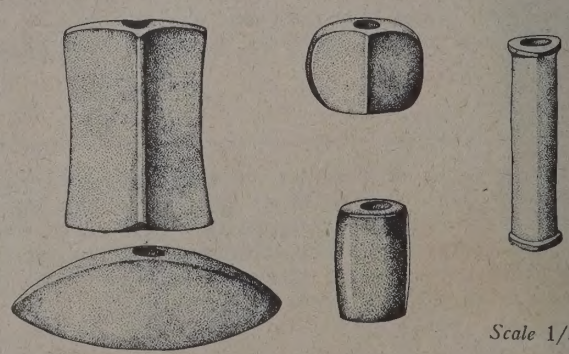
into the sockets of the spear shafts. Much of the power of our spear throwers depended on how well they were made, but part of it came from certain mystical things which we attached to them. Some of us worked many moons fashioning rare stones into these magical charms which would bring us good luck in hunting. Such stones were usually very hard and difficult to shape, but our forefathers had learned in Asia to work it in a different manner from the way they did flint. By pecking with a pebble long and patiently, one could gradually crumble the surface of a stone and give it the desired shape, sometimes that of a bird or butterfly with wings spread in flight. Then we had to spend long hours grinding away the roughness and polishing the surface. Finally we drilled a large hole through the charm so it would slide onto the rod of the spear thrower. To do this we used a hollow cane for the drill point and filled it with wet sand. The drilling took many days, but it was well worth the time spent to insure one's future hunting bag. Some men who lacked the skill to make a truly powerful charm from stone, were content to use pieces of shell or feathers.

We made other things from stone by the grinding method, mostly ornaments. Our favorite was a thin flat bar of slate or similar material with a hole drilled near each end so it could be worn on



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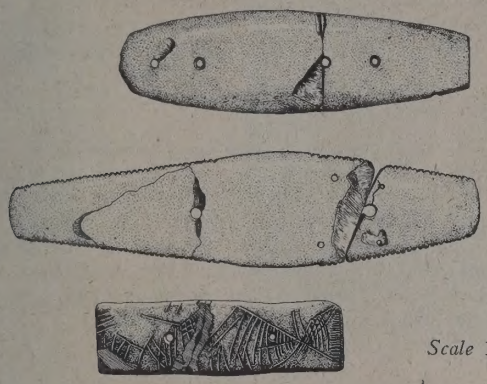
the chest hanging from a neck cord. Some people made beads by grinding down brightly colored pebbles; but beads were more easily made from shells,

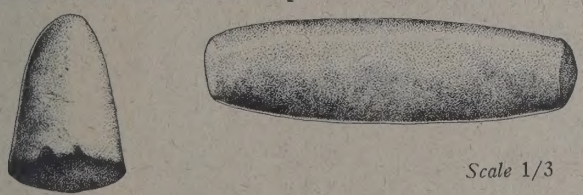


Scale 1/3

if one was willing to make the long journey to the seashore to get the right kind.

Scale 1/3

The only household articles that our people made by grinding the stone were the pestles which women used to grind up seeds and other dried food. The women took a lot of time in shaping the handles of the pestles because when they tried to pound and grind seeds with rounded pebbles from a stream bed,



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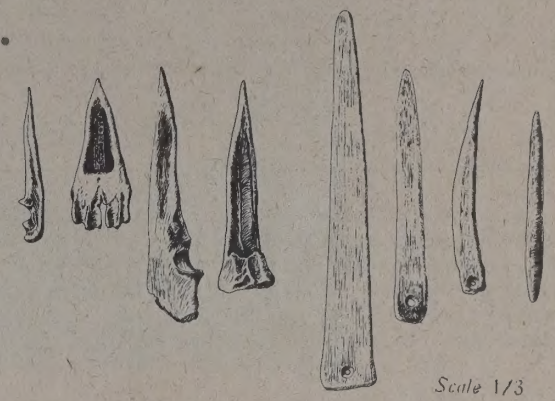
they occasionally mashed a finger or two. Men had an easier time making their tools. With a flint adz, chipped out in a few minutes, we made fine dugout canoes.

A man had to have a squaw in my day. Otherwise, he had trouble getting his food prepared, his clothes made, or his house built. When I killed a deer or bear, robes and clothing had to be made from the hide. I followed the animal trails, but these were rugged, and often I wandered far from home before I made a kill. When this happened, the animal had to be slaughtered on the spot, and the hide and edible parts of the carcass salvaged. When I reached home my squaw took over. She got busy and smoked the meat first. Then she scraped the hide and stretched it. While it was drying she usually made some needles and awls from the leg bones and



Scale 1/3

sewed some new moccasins and other gear from hide already cured. Sometimes, while I was hunting she carried out needed repairs on our hut, wove some new baskets and gathered firewood.

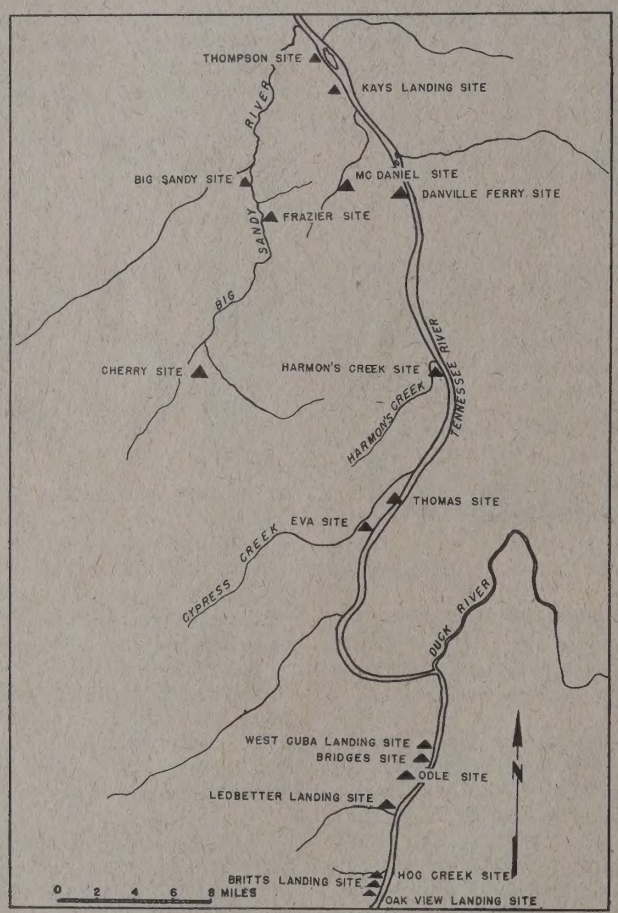
My squaw had a special set of tools for dressing the animal skins. To separate the flesh from the hide she used a thick piece of antler cut through diagonally to give it a thin edge. This was a strong

edge, and it was not sharp enough to cut the skin and spoil it. Next, she used a flint tool made from one of my broken spear points to scrape the skin smooth on both sides. After treating it with the animal's brains and soaking it overnight in water, she stretched it on a frame of poles. Then, to help remove the moisture, she again scraped it with a dull flint blade. When the skin was dry it was harsh and still and she had to work it soft by rubbing it with a smooth piece of antler. Soft warm skins were necessary to us for winter clothes and bed covers, and when our people died we wrapped them tightly in burial robes.

Our burial ground was at one end of the village in the place where we di sposed of the refuse, especially the thousands of empty clam shells. In the more ancient villages of my tribe which I went to occasionally were great shell mounds, three or four hundred feet long and one or two hundred wide, and higher than my head. No one had any idea of the number of graves they contained.

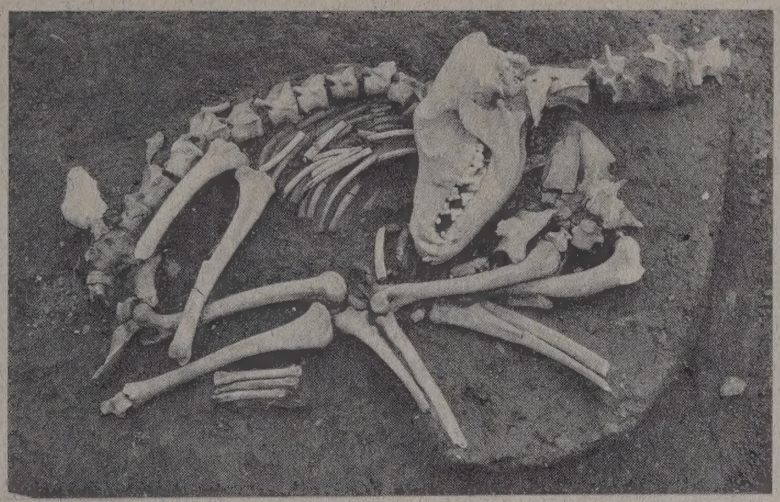
When I died they buried me in the usual manner with my arms and legs bent tightly against my body. They wrapped me in my finest deer skin and placed me in a small circular grave. I was an old man for my day and time--I had seen nearly fifty summers. My eyes were dim, one ear had lost its hearing, and my right leg was lame from an old wound. I had been tall and strong during my youth, and my eyes and ears were keen, but when our people reached the age of fifty their bodies were worn out and they were too old to hunt. So, I was content to go to the happy hunting ground and join my ancestors.

Note: Many other eastern states contain village sites of similar Indians, although they have been assigned other names because their ways of life differed slightly from that of the Eva people. This, of course, was due mainly to the variable nature of the foods and raw materials present in the different localities. The general name applied to these particular Indian cultures is Archaic. The ancestors of the people were an Asiatic group who came to the New World by way of Bering Strait more than five thousand years ago. By 3000 B. C. they had spread over a large part of the eastern United States.

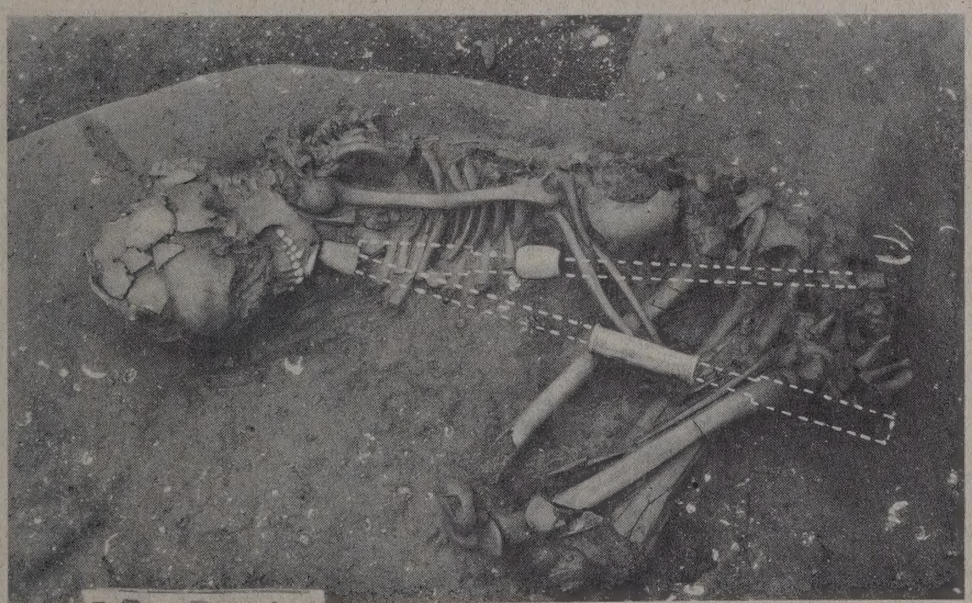


THE WESTERN VALLEY OF THE TENNESSEE RIVER IN TENNESSEE

Home of the Eva People



Dog burials are often present on Eva sites



Two throwing sticks were buried with this Eva hunter. The antler hook of one touches the chin. The hook of the other stick touches the pelvis. Dotted lines indicate probable former positions of wooden shafts and handles.

EARLY PROJECTILE POINT FORMS, AND EXAMPLES FROM TENNESSEE

T. M. N. Lewis and Madeline Kneberg

During the past twenty years scientists have learned much about early man in America. Certain finds, dated by radioactive carbon, have established beyond doubt that the first people migrated from Asia to North America before 8,000 B. C., or more than ten thousand years ago. At that time the Ice Age was on the wane. In fact, there was a period of several hundred years, beginning about 9,000 B. C., when the world's climate was comparatively mild, after which it turned colder again. However, during the mild centuries there was still a large amount of the earth's moisture locked up in the polar ice caps and in the mountain glaciers in other latitudes. Consequently, the sea level was more than two hundred feet lower, exposing a broad bridge of land joining the continents of Asia and America in the region of Bering Strait. As the great ice sheets receded and uncovered the land, plant life appeared. At first there were only mosses and dwarf shrubs. On these reindeer browsed. Later on, grasses appeared and the vegetation belts gradually extended farther north. Herds of animals accustomed to grazing on the grasslands also moved north. From Asia many of the herds eventually crossed over the land connection into Alaska.

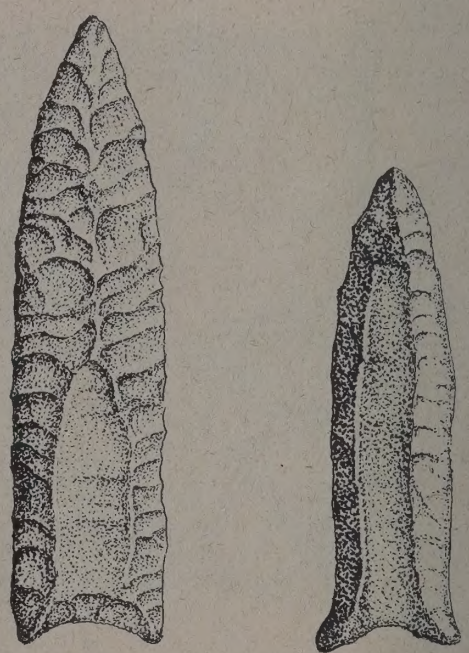
Hunters followed these herds over game trails, some of which probably extended up the valley of the Yukon in Alaska and thence southward along the route now followed by the Alcan highway. Other trails undoubtedly ran across the Arctic Coastal plain to the mouth of the Mackenzie River and from there into the interior of Canada.

After the short interval of mild climate, the gateway to the New World was again closed by the return of bitter cold. During the following two or three thousand years the people who had crossed over, as well as the herds of reindeer and mammoths which they hunted, were gradually forced southward. On the American plains the hunters found other kinds of game such as mastodons, horses, camels and large, straight-horned bison. These animals became extinct later on, probably during an intense drought that prevailed between 4000 B. C. and 2000 B. C. The drought was the result of the very warm and dry climate that characterized that period.

Archaeologists have made careful investigations at the camp sites of the early people in the southwestern states and in the Great Plains region. Because they have found only a limited variety of stone and bone objects, not much is known as yet concerning the whole way of life of the ancient hunters. Nevertheless, a sufficient number of spear and dart points have been found in close association with extinct animal bones in datable geological strata to provide some dependable conclusions. It is now known that there were some important differences as well as similarities in the styles of projectile points made by different groups, and that some of the styles were earlier than others.

The Clovis Point

In 1936 a gravel pit near Clovis, New Mexico was opened up, and in it a number of Folsom points were found by a local collector. He discovered one that was imbedded in a vertebra of an extinct bison skeleton which lay in the blue clay subsoil beneath the gravel. Instead of bringing the find to the attention of a trained archaeologist, he dug the



CLOVIS

vertebra out of the soil and pulled the flint point from it, thus destroying the proof of his claim.

Since that time, professional archaeologists have done some very careful work at the site. In addition to finding more of the typical Folsom points, they have discovered at lower depths a number of somewhat different forms which have shorter flut-

ings and are larger in size. As a result of recent investigations at Clovis this type is now recognized as distinct from the Folsom point and is known as the Clovis point. It was made by predecessors, perhaps the ancestors of the Folsom men.

Similar large, partly fluted forms have been found over much of the eastern United States; they have generally been called Folsomoid or Folsom-like points. They resemble the Clovis type far more than they do the classic Folsom. In Tennessee many have been found especially in and near Maury County. Careful examination of a large number of Tennessee fluted points have shown that they are practically identical to the Clovis forms. Photographs accompanying this article illustrate a number of these Clovis type points in collections belonging largely to members of the Tennessee Archaeological Society. All were found in the Tennessee River drainage system.

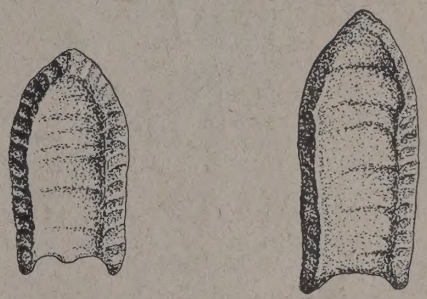
The edges near the base of a Clovis point nearly always show evidence of grinding to remove the sharp edges. Usually the basal edge is also ground smooth. This is a distinguishing feature of many of the ancient projectile point forms. The obvious reason for this was to prevent the sharp edges of the flint from cutting the cord or sinew which bound the point to the shaft. Since these early projectile points were used on throwing stick darts that were often retrieved for further use, it was an economical idea.

EVA

Both of these points lack flutings, but are good examples of grinding. They came from Eva* sites in Benton County, Tennessee.

The Folsom Point

The Folsom points represent a technical advance over the earlier Clovis form in workmanship. They are smaller in size, being only about two inches long on the average. They are quite thin, and have a deeply incurved base. One of the most characteristic features of the Folsom point is the extension of the longitudinal fluting almost to the tip on each face. As with Clovis forms, the edges near the base usually show evidence of grinding.



FOLSOM

The fluting of the Folsom and Clovis points raises a problem as to the technique by which it was accomplished. At the famous Lindenmeier site in Colorado a spall was found that fitted into part of the fluting on a Folsom point. Because the spall was chipped on one face only, it was concluded that the point had been finished before the spall was removed. While such a feat might have been accomplished by an exceptionally skilled workman, it seems unlikely that the procedure was commonly used. A powerful blow, applied either directly or indirectly, is required to produce the fluting. Our tests with small finished blades have been quite unsuccessful.

The majority of the Folsom points have been found in the Great Plains which extend along the eastern slope of the Rockies; some have also been found west of the Rockies, while others have been reported as far east as New England and as far south as southern Texas.

The Plainview Point

At Plainview, Texas a large number of points, similar to the form illustrated below, have been found with the remains of the extinct straight-horned bison. In shape they resemble Clovis fluted type, but they lack the fluting, and the ground edges extend much farther toward the point than on the other types.

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*See article titled "An Archaic Autobiography."

PLAINVIEW

There is a type of point found along the Tennessee River called the Copena point on which slight grinding of the base and adjacent edges is common. In shape they bear a resemblance to some of the Plainview points. However, they are of much more recent origin.

COPENA

From the standpoint of age the Plainview points are believed to be somewhat later than Clovis and Folsom, and earlier than those which were formerly known as Yuma.

The Eden Point

So many different forms of so-called Yuma points have been found in the West that it was decided several years ago to discard the name entirely and give names to each of the several different forms. The Eden type of point is one of the several varieties that were formerly called Yuma. This type of point is long and narrow. Remarkably even, parallel flaking characterizes the blade which shows a rather high ridge along the center of both faces. A broad stem is present and the edges of the stem are ground down for hafting. The shoulder is very slightly indented but definitely present. There has been little doubt about the antiquity of this type of point, since a portion of one was found in Alaska on the same level with a mammoth tusk and the lower jaw of an extinct lion.

EDEN

The Scottsbluff Point

The Scottsbluff type is somewhat similar to the Eden but is wider in proportion to its length. It lacks the thick central ridges, but the edges of the broad stem are ground similarly to the Eden form. Since the Eden and Scottsbluff points have been found associated in the same level, it is to be assumed that both were used by the same people at the same time and merely represent variations in style.

SCOTTSBLUFF

Fluted Points from Tennessee River Drainage

The illustrations of fluted points which follow this article were made possible by the splendid cooperation of Society members. At the last annual meeting in December the Editor requested that fluted points from the Tennessee River drainage possessed by Society members be sent to the U-T Department of Anthropology to be photographed. A request was also sent to Dr. Frank H. H. Roberts of the Smithsonian Institution to supply photographs of any Tennessee fluted points in the collections of the U. S. National Museum. These appear as Figs. 7 and 8 of Plate IV.

Figs. 9-14 were made under poor lighting conditions at the Franklin home of the late Luther McCall. We were informed that all six points were found by a boy on a plowed field in the southwest corner of Williamson County. Four of the six have fish-tail bases and full length flutings. They are similar to one of the two Clovis forms shown hereafter. Others having this same peculiar shape are Figs. 2, 8, 10 and 12 of Plate II, Figs. 1, 4 and 5 of Plate III, Fig. 2 of Plate IV, Figs. 1, 7, 9, 10, 12 and 13 of Plate V, and probably Fig. 5 of Plate I.

The fracture margins of most of these specimens show weathering, but that characteristic alone does not certify their antiquity. Both the weathering conditions to which the specimens have been exposed and hardness of the material from which they have been made are variable. An occasional fluted point shows no more weathering than others which are known to have been made by very late Indian groups. Accordingly, conclusions regarding the antiquity of these fluted types must be reached through other methods of approach.

There are some students of the subject who maintain that the fluting technique persisted until relatively recent Indian times. It is not clear on what this opinion is based, other than the anthropological maxim that human arts once acquired are seldom lost to posterity. On the other hand, only those arts are retained which are practical as well as useful. Channels on both faces of a projectile point in which to seat the split ends of a shaft would increase the streamlining and the ability of a comparatively slow missile to penetrate. Thus, it can be said that these channels or flutings were useful. But later, when arrows, a more expendable form of ammunition, came into general use, the difficult fluting operation must have been looked upon as impractical and, therefore, abandoned. The small, primitive family groups that wandered through the Tennessee woodland some eight or ten thousand years ago needed few flint points because their darts were retrievable.

After numerous and wholly unsuccessful attempts to produce flutings in excess of a half inch in length, our admiration for the earliest American hunters' exceptional skill in stone chipping techniques is unbounded. The Clovis, Folsom, Eden and other early points exhibit a degree of excellence rarely equalled by the more advanced Indian groups of later years.

PLATE I

Fig. 1. Both faces of point from vicinity of Murfreesboro, Tenn. Basal edge and adjacent side edges are ground. Coll. of H. H. Hassler.

Fig. 2. Slightly fluted point from Barren County, Ky. Small amount of basal grinding. Coll. of H. H. Hassler.

Fig. 3. From Barren County, Ky. Coll. of H. H. Hassler.

Fig. 4. Basal edge and adjacent side edges are ground. Right-hand basal "ear" is missing. From Barren County, Ky. Coll. of H. H. Hassler.

Fig. 5. Basal "ears" have been broken off; fluting extends almost to tip on both sides. Coll. of H. H. Hassler.

Fig. 6. Translucent chalcedony point from Barren County, Ky.; length 1 7/8 inches. Basal edge and adjacent side edges are ground. Coll. of H. H. Hassler.

Fig. 7. From Buffalo Wallow, Ky. Length $1\frac{1}{2}$ inches. Basal edge and adjacent side edges are ground. Coll. of H. H. Hassler.

PLATE I

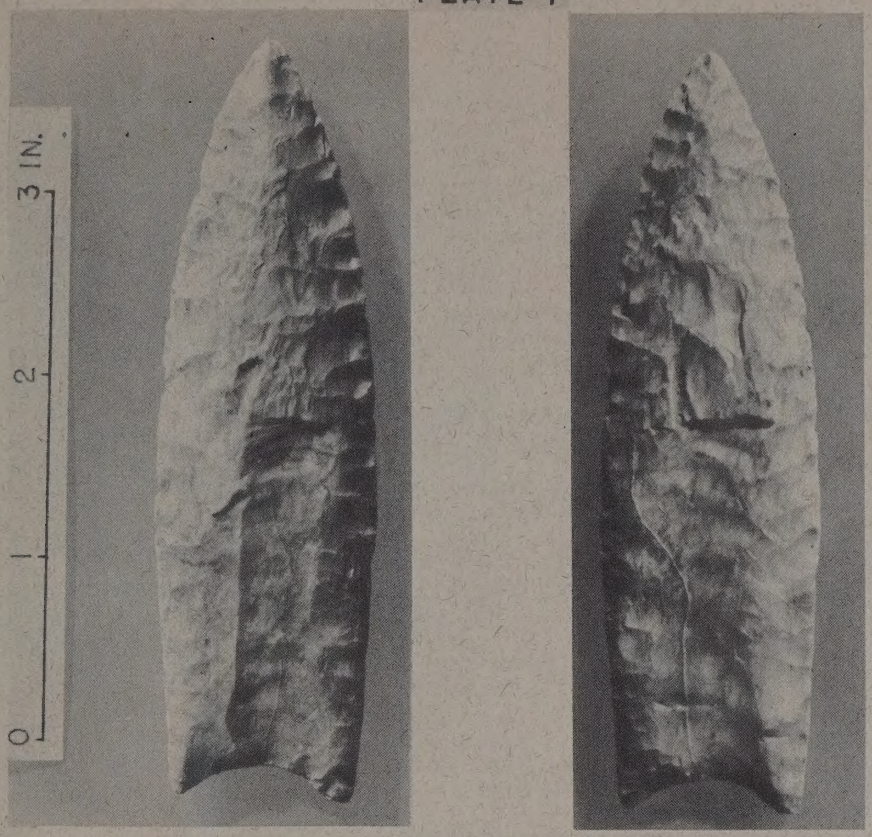


FIG. 1

FIG. 2 FIG. 3 FIG. 4 FIG. 5 FIG. 6 FIG. 7

PLATE II

Fig. 1. Found by R. L. Denny at the Bozarth mound site (now submerged) on Caney Fork River, DeKalb County, Tenn. Basal edge and adjacent side edges are ground. Coll. of Guy Stack.

Fig. 2. Found by Joe Ledbetter in Montgomery, County, Tenn. This long, slender type also occurs in the Texas area. Coll. of Guy Stack.

Fig. 3. Found by John Hessle, Stewarts Ferry, Davidson County, Tenn. Coll. of Guy Stack.

Fig. 4. Found at mouth of Sycamore Creek in Cheatham County, Tenn. Length $2\frac{1}{2}$ inches. Coll. of Guy Stack.

Fig. 5. Found by Thomas Jones near Hartsville, Trousdale County, Tenn. Basal edge and adjacent side edges are slightly ground. Coll. of Guy Stack.

Fig. 6. Found by T. L. Summers in north Robertson County, Tenn. Length 3 3/4 inches. Coll. of Guy Stack.

Fig. 7. Found by G. E. Johnson on his farm near Springfield, Robertson County, Tenn. Basal edge and adjacent side edges are slightly ground. Coll. of Guy Stack.

Fig. 8. Found near confluence of Sinking Creek and Duck River, Tenn. Fluting extends almost to tip on both sides. Coll. of Chas. G. Hummel.

Fig. 9. Fluted crystal blade from the Joe Freeman Farm, Bellbuckle, Bedford County, Tenn. Point was broken by original owner while trying to strike fire with steel. Coll. of Chas. G. Hummel.

Fig. 10. From Central Tennessee. Fluting extends to tip on both sides. In shape it is similar to Figs. 2, 8 and 12 of this plate to Fig. 5 of Plate 1, and to Figs. 2, 9, 10, 11 and 12 of Plate IV. Coll. of Malcolm W. Hill.

Fig. 11. From central Tennessee. Basal edge and adjacent side edges are slightly ground. Coll. of Malcolm W. Hill.

Fig. 12. From Central Tennessee. Coll. of Malcolm W. Hill.

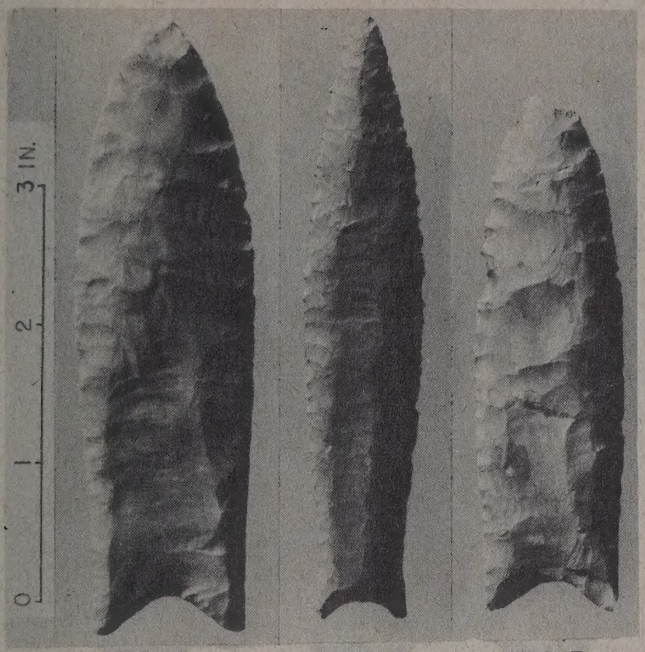


FIG. 1 FIG. 2 FIG. 3

FIG. 4 FIG. 5

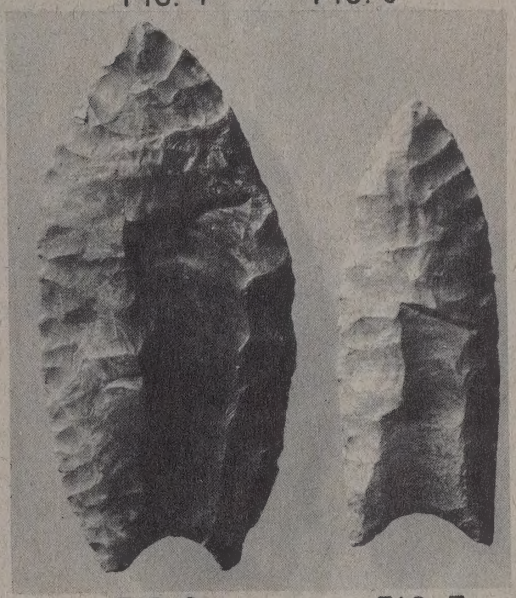


FIG. 6 FIG. 7

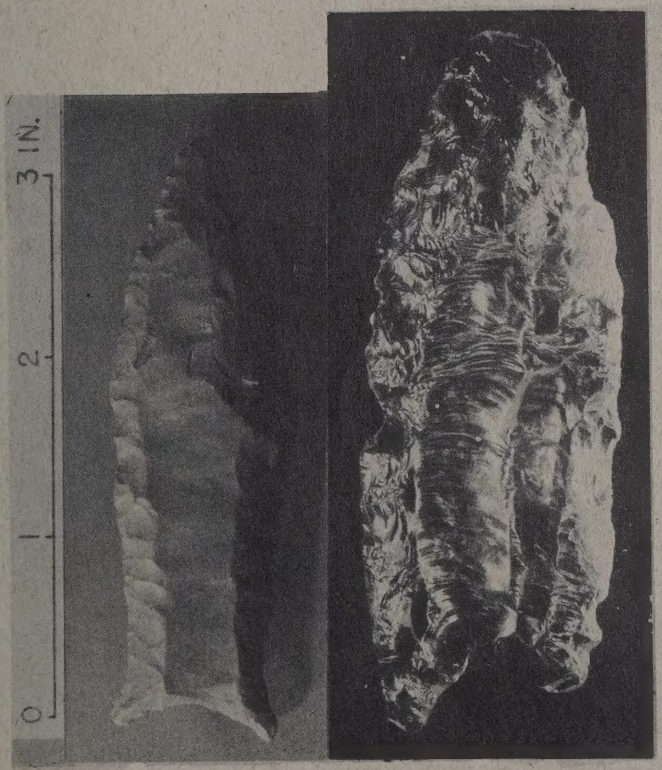


FIG. 8 FIG. 9

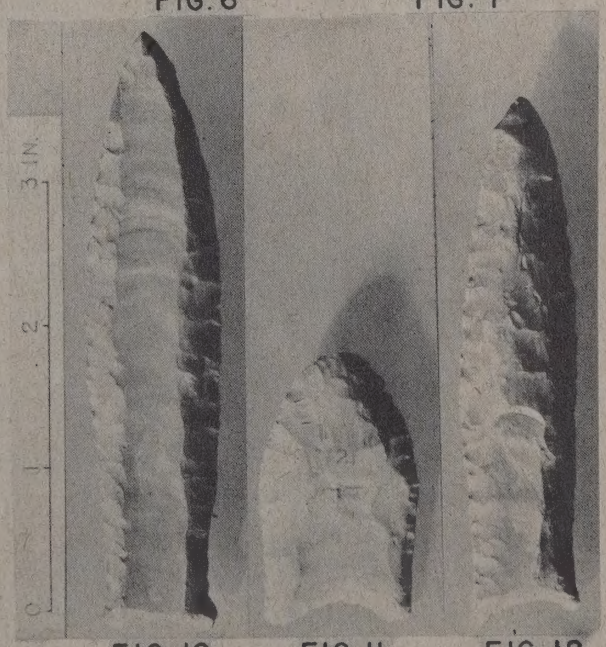


FIG. 10 FIG. 11 FIG. 12

PLATE III

Fig. 1. Found by U-T archaeologists on surface of a burial mound, Hiwassee Island, Meigs County, Tenn. Basal edge and adjacent side edges are ground. Length $2\frac{1}{4}$ inches. U-T Coll.

Fig. 2. Found on Queener Farm, Blount County, Tenn. by a T. V. A. engineer. Length 3 inches.

Fig. 3. Found in a high mountain valley, 8 miles southwest of Irwin on South Indian Creek, Unicoi County, Tenn. Left basal "ear" is missing. Length $2\frac{1}{2}$ inches. Coll. of Paul Fink.

Fig. 4. Citico site near mouth of Chickamauga Creek, Hamilton County, Tenn. Coll. of C. K. Peacock.

Fig. 5. From an unknown location in Kentucky. Coll. of C. K. Peacock.

Fig. 6. Found by Robey Maiden in the well fields at Saltville, Va. Length 2 2/5 inches. This point and the one in Fig. 7 are included in the illustrations since Saltville lies in the Tennessee River drainage.

Fig. 7. Crystal point with ground basal edges found by Robey Maiden one-half mile southeast of Saltville, Va. Length 2 1/5 inches. The short fluting is none too evident in the photograph.

Fig. 8. Humphreys County, Tenn. Basal edges and adjacent side edges are ground. Coll. by Geo. T. Barnes. U-T Coll.

Fig. 9. Humphreys County, Tenn. Basal edge and adjacent side edges are ground. Coll. by Geo. T. Barnes. U-T Coll.

Fig. 10. Humphreys County, Tenn. Coll. by Geo. T. Barnes. U-T Coll.

Fig. 11. Davidson County, Tenn. Surface find near Harpeth River bridge. U-T Coll.

FIG. 1

FIG. 2

FIG. 3

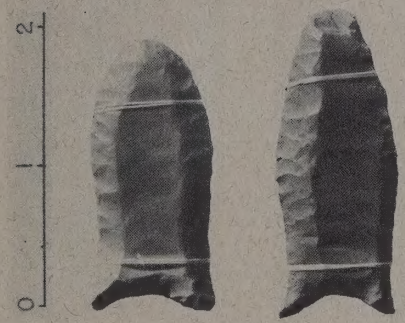


FIG. 4

FIG. 5

FIG. 6

FIG. 7

FIG. 8

FIG. 9

FIG. 10

FIG. 11

PLATE IV

Fig. 1. Found at Carters Creek, Maury County, Tenn. Basal edge and adjacent side edges are ground. Length 2 3/4 inches. Coll. of Judge H. L. Webster.

Fig. 2. Found at Carters Creek, Maury County, Tenn. Point broken. Length 2 inches. Coll. of Judge H. L. Webster.

Fig. 3. Found on Flat Creek, 9 miles southeast of Columbia, Maury County, Tenn. Basal edge and adjacent side edges are ground. Coll. of Judge H. L. Webster.

Fig. 4. Found on Duck River, opposite Monsanto, Maury County, Tenn. Basal edge and adjacent side edges are ground. Coll. of Judge H. L. Webster.

Fig. 5. Found near Columbia, Maury County, Tenn. Surface shows extreme weathering. Left "ear" is missing. Coll. of J. E. Gurvin.

Fig. 6. Found near Columbia, Maury County, Tenn. Basal edge and adjacent side edges are ground. Portion of left "ear" is missing. Coll. of J. E. Gurvin.

Fig. 7. From collection purchased by Bureau of Amer. Ethnology in 1902 from S. V. Proudfit of Knoxville. Data accompanying collection states that specimen was found near Knoxville, Tenn. Fluting is quite short; basal edge and adjacent side edges are ground. U. S. National Museum Coll.

Fig. 8. From collection of Messrs. Meadow, Cartwright and Roscoe of Goodlettsville, Tenn., turned over to the B. A. E. by W. E. Myer. Possibly from vicinity of Goodlettsville. U. S. National Museum Coll.

Fig. 9-14. These six points are reported to have been found by a boy on a creek bank in the southwest corner of Williamson County. The length of Fig. 9 is five inches. Coll. of the late Luther McCall.

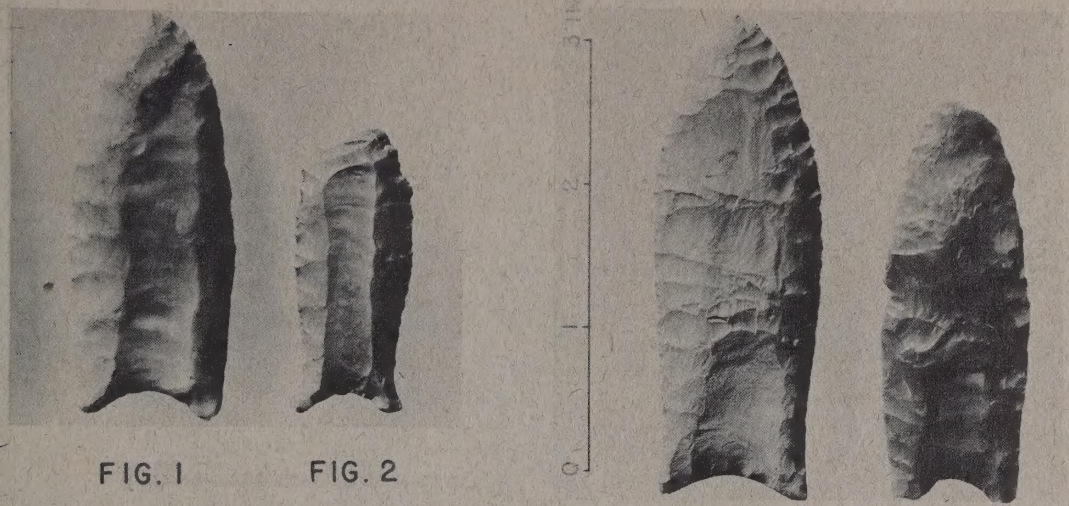


FIG. 1 FIG. 2 FIG. 3 FIG. 4

FIG. 5 FIG. 6

FIG. 9 FIG. 10

FIG. 7 FIG. 8

FIG. 11 FIG. 12 FIG. 13 FIG. 14

PLATE V

All points included in this plate, except 11 & 15, are contained in the Malcolm Parker collection.

Fig. 1. Fluting extends the entire length. Found at Castalian Springs, Tenn. by Preston Belote in 1950.

Fig. 2. An early form which lacks any fluting. Found by M. Parker on Bledsoe Creek near Bethpage, Sumner County in 1926. In the same field were found Nos. 3, 5 and 6.

Fig. 3. Partially fluted Clovis type. See Fig. 2 for location.

Fig. 4. An early form without fluting. Found by M. Parker one mile from Bledsoe Creek at Bethpage, Tenn.

Fig. 5. An early, slightly fluted form. "Ears" have been broken off. Found in 1926 by Robert Parker on Bledsoe Creek near Bethpage.

Fig. 6. An early unfluted form. Other data same as Fig. 2.

Fig. 7. Early unfluted form found in 1924 by M. Parker at confluence of Breshey Fork and Bledsoe Creek in Sumner County, Tenn.

Fig. 8. Partially fluted Clovis type. Found by M. Parker in 1939 at Bethpage, near Bledsoe Creek, Sumner County.

Fig. 9. A Clovis type fully fluted on one side and no fluting on opposite side. Found in a late Mississippi site at Bethpage.

Fig. 10. A fully fluted Clovis type. Other data same as Fig. 9.

Fig. 11. Partially fluted Clovis type. Found by Conway Hackett in 1924 on Station Camp Creek, Sumner County. This is a tributary of the Cumberland River, as is also Bledsoe Creek.

Fig. 12. Clovis type. Fluting extends two-thirds of the length. Found by Hubert Durham in 1935 on Rhodes Creek, Bethpage, Tenn.

Fig. 13. Clovis type. Fluting extends one-half the length. Found by L. L. Byrd in 1938 on Bledsoe Creek, Bethpage, Tenn.

Fig. 14. Clovis type with thinned base but no fluting. Found in Davidson County, Tenn. near White Bridge Road.

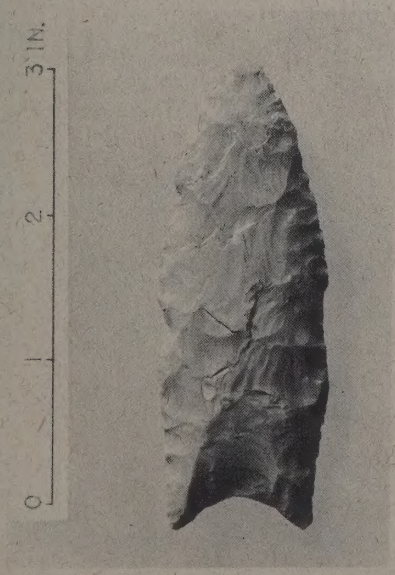
Fig. 15. Clovis type point found by J. W. Green in Johnson County, Tenn. on bank of (former) Roan Creek, about one quarter mile above its confluence with (former) Doe Creek. This area is now covered by Watauga Lake.

Fig. 16. Deeply grooved axe which has been stolen from U-T collection.

PLATE V

1 2 3 4 5 6 7

8 9 10 11 12 13 14



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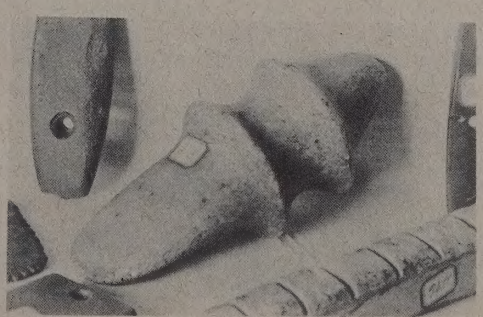


16

HILL-O-GRAPHS

Wide bows-

I note in the very interesting article by Guy Stack in the August, 1950 issue of this journal a quotation from Berlin's "Prehistoric Implements" attributed to an early traveler, in which the Indian's bow is described as being "as thick as a man's arm." I suspect that the author of this statement meant to say that the bow was as wide as a man's arm is thick, for some of the flattened types of Indian bows are rather wide. These were never thick, for if they were, they would have been too rigid to be bent sufficiently to propel an arrow "200 paces."

****

Boat-stones-

Speaking of bows, I would like to propound a theory regarding the use of those boat-shaped stones which have a flat top side. Might it not be possible that these stones were bound to the front midsection of the flat type of bow to provide a better hand-grip for the archer? The historic bow has always been equipped with a padded hand-grip, and

the thickness of the padding is governed by the size of the bow and the hand of the user.

These long, tapering boat-stones generally show very careful workmanship and high polish. Those which I have weighed vary from one to three ounces. In testing out the theory personally I have become convinced that such a stone does improve the grip considerably. In addition to improving the efficiency of the bow there is also the consideration that the object may have served as an amulet for magically assisting the archer's aim.

Certainly, not all boat-shaped stones were used as bow-grip aids. I have in mind only those forms which would be mechanically helpful.

Several published reports record the finding of boat-stones in dredged gravel piles and on sand bars. A possible inference to be drawn from this is that bows were lost on water during battles as accidents. The boat-stone, if heavy, would sink the bow; or if light, the bow would float ashore or upon a sand bar. In either case, the stone would be the sole survivor in time.

I am not in accord with the theory advanced by some that boat-stones were cast into the waters to appease the water spirits. A more practical theory will have to be formulated. The boat-stone represents much time, in the finding of suitable raw material, shaping into the desired form and polishing to a high gloss. My conviction is that a more practical use was made of these objects by the Indian. Miniatures could have been used quite as well for native offerings and saved a great amount of labor.

****

Drills-

Guy Stack's comments on flint drills in the last issue of this journal were particularly interesting to me. These beautiful artifacts are, I think, more apt to have been used as reamers for making holes in hard materials, or as perforators for soft materials, rather than as drills for wood, stone or any other hard material.

About five years ago I spent many hours experimenting with so-called flint drills, using wood, slate and soapstone. My experiments demonstrated to me very convincingly that these tools could be used for only very light duty. I suspect that they were used in the fingers only, for the addition of a haft gives the user far too much purchase, with resultant fracturing of the flint.

When used as a drill, in a very short time the tip either broke off or wore smooth and seated itself and was no longer capable of penetration. I broke a large number of these perforators in an effort to make them perform the kind of work which has been attributed to them in the literature. My opinion is that these tools were used to ream out holes made with stout, unworked pieces of flint having a rectangular or triangular cross-section. I found that a small hole can be nicely trued with a flint reamer of the proper size. A large hole can be made by employing, first a series of unflaked flint points in graduated sizes, and then a series of worked flint reamers in graduated sizes.

****

Restoration techniques-

In the thought that my experience in repairing over a thousand artifacts may be of some help to a few Society members, I shall explain some of the techniques for whatever they may be worth.

In order to accomplish a permanent repair job in the case of broken stone artifacts it is best to

use a slow setting cement or glue. If glues are used, it must be born in mind that nearly all of them will break down eventually under conditions of dampness. So if permanency is desired it is better to use a cement like DuPont's. Where large portions of an artifact are missing, they can be replaced with plaster of Paris. The plaster is made up by adding water to the powder until it becomes a thick paste, care being exercised to avoid stirring it, since this will cause the plaster to set too rapidly. All necessary trimming of the plaster should be done with a knife before it becomes too hard. A smooth surface can be obtained by rubbing with fine, washable, gray sandpaper. Where portions are missing from the edges of objects, such as the bit portion of a celt, it is necessary to use a backing material to support the plaster while it sets. Any of the oil modeling clays are satisfactory for this purpose. Some of the water clays like "Marblex" are just as satisfactory as plaster of Paris, if not more so, for some kinds of repair work. If it is desired to increase the hardness of either plaster or water clays after they have dried, a very thin acetone solution of DuPont's cement can be brushed over the surface until absorption ceases.

Plastic wood is also good for filling in small nicks and dents, but must be applied in thin layers. This is necessary in order to offset shrinkage. It is to be noted also that plastic wood does not adhere too well to stone materials, but it is an easy enough matter to cement it back in place in the event it does come loose. It can be polished with ease and takes colors well.

And speaking of shrinkage, it is important to bear in mind that when any of the volatile liquid cements are used, the outer portion will dry first, causing a surface tension to set in which will pull light parts slightly out of position. To overcome this tendency, light weights, spring clips or small screw clamps should be used to hold the parts in place until the cement has set.

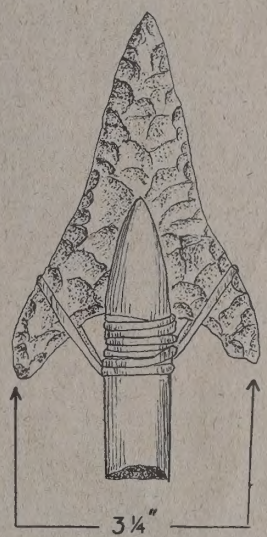
Water colors are better than oils for coloring but need to be covered with a fixative to give them permanency. Most of the so-called "crystal clear" fixatives fail to remain clear for more than a few years. The Department of Anthropology at the University of Tennessee has been using a resin for this purpose with very satisfactory results. It is known as "Gelva" and is manufactured by the Shawinigan Products, 350 5th Avenue, New York, New York. The crystals are very soluble in acetone (C.P.) and make an excellent hardening solution for shell and bone objects, as well as a fixative for colors.

****

Gig point-

Sometime ago I received from an Arkansas acquaintance a flint blade of much larger size for its particular type than I had ever seen before. Because of its greatly exaggerated barbs I have felt that the object was designed for some specific purpose. Since it does not seem to lend itself to any of the usual hafting methods, perhaps the bridle form of hafting illustrated in the accompanying sketch was used.

I once saw a catfish that exceeded 100 pounds hauled by a hand line from the Mississippi River below Memphis. No aboriginal bone fishhook which I have ever seen would have withstood the strain of



such a battle; doubtless, such a fish had to be taken with a gig. Could it be that an Indian fisherman, after failing to capture a grandaddy catfish with a spear tipped with the standard form of gig flint, ordered a special heavy-duty point from his home town flint knapper like the one which I have described?

While the barbs are thick and wide, they do not interrupt the streamlining of the point, and once it was imbedded in the flesh of a heavy fish, it would not pull out during the struggle or when the fish was being drawn from the water. Shall we call this a nice example of functional designing by the aboriginal flint knapper?

****

Many-purpose tool-

A drawing of an unusual finger-held type of flint tool is shown herewith. It has a deeply in-

curved base which is thinned by flaking. The ears

at either end of the base are sharp. A sharp barb is present on one side, and the working end is boldly beveled to form a strong, thick-ridged (7/16") scraper.

The small tool is made from milky, translucent agate and weighs less than half an ounce. Its width at the base is one and one-eighth inches. It is my considered opinion that it cannot be included in the class of reworked broken projectiles. It is illogical to assume that the stone-worker who had the skill to turn out as neatly a fashioned tool as this would have been satisfied to make a projectile point of such excessive thickness as this piece is at its center. It was obviously designed for strength and long usage and could have been used quite satisfactorily as a scraper, groover, shaft smoother and scriber; the barb could have served as a slitter, and even the ears as perforators. Here, indeed, is a many-purpose, tiny flint tool which is certainly a tribute to the ingenuity of the primitive stone-worker who contrived it.

****

Splint-hafting of thick blades-

It has been suggested that thick, pointed blades may have been hafted occasionally at right angles to a handle, like the celt. This is possible, but the blade used in this manner, either as an implement or weapon, would lack the strength of the celt or ax, and its oval shape and sharp edges would increase the hafting difficulties. Any movement of the blade upon impact would cause the sharp edges to sever the lashings. We have visual evidence of the Indian's awareness of the shearing effect that sharp edges had upon lashings by the many examples of ground sides and bases, even as long ago as Folsom Man.

The sharp point of such an implement would not survive any such heavy duty as a pick, and it would have little value as a chopper. As a weapon, it would not be comparable to ground stone axe heads in effectiveness, especially from the hafting standpoint. One can surmise that dependability of the hafting was of some importance to the warrior.

Too few writers have given sufficient thought to the basic element of thickness in classifying flints. To me, after hafting more than five hundred stone tools, the thickness of the stone is a most important factor in determining the probable use of the implement and the best method for fastening it to a handle.

****

Early projectile forms-

In my collection are several points from the Tennessee and Kentucky regions (Figs. 1-6 in accompanying plate of illustrations), which are suggestive of early projectile forms. Possibly, Nos. 1 and 4 can be excepted. No. 1 is from Obion County, Tennessee; it is made of black flint, has beveled edges and a pronounced propeller twist. No. 2 is from Stewart County, Tennessee and somewhat Yuma-like in shape. No. 3 is a reworked Yuma-like blade. The notches are a later addition and show much cruder workmanship than the rest of the specimen. It is from Summit County, Kentucky. No. 4 is a blade which may have been used with removable bone handle into which the point was inserted when the tool was used as a scraper. Polish at the basal end indicates such usage. At other times the blade may have been reversed in the handle and used as a knife. No. 5 is a blade which was undoubtedly hafted and used as a knife. The oblique flaking is somewhat suggestive of Yuma technique. It is from east Kentucky. No. 6 is probably a small, light-duty knife blade with thinned base; the prominent ears may suggest Folsom influence.

****

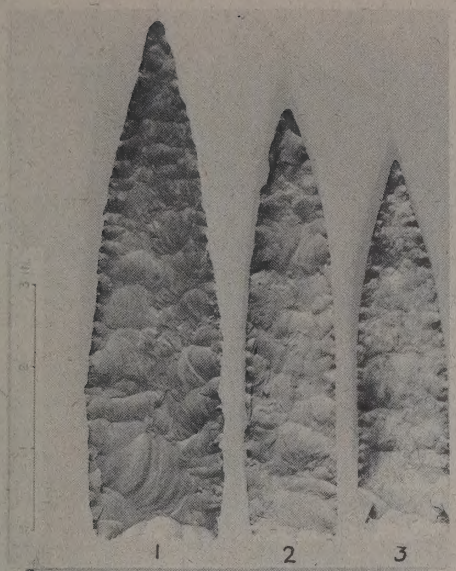
Kenneth H. Jones-

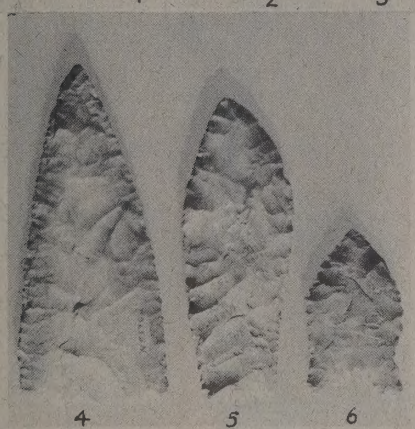
of Mortlach, Saskatchewan, Canada has an exceptionally fine and large collection of artifacts. He came to Mortlach as a young man forty years ago, and shortly thereafter began to gather archaeological material from the surrounding plains.

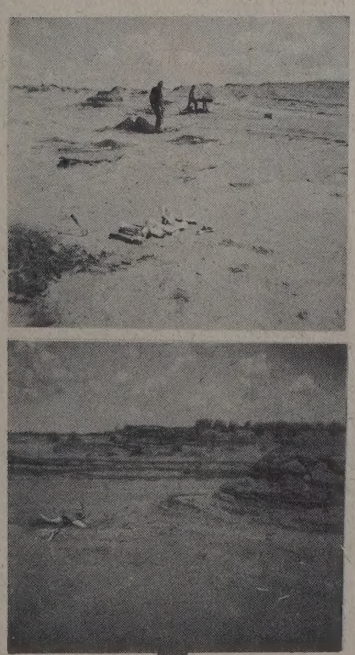
During the big blows of the 1930's Mr. Jones spent much time searching areas which had been severely eroded by the winds. On one occasion a terrific blow sprang up and he was nearly buried by the shifting soil.

Included herewith are two recent snapshots (No. 7 in accompanying plate of illustrations) which he has taken of the wind-blown plains surrounding his home. In the foreground of the upper picture are some assembled bones of the extinct long-horned bison which the winds uncovered. In the lower picture the horns and part of the skull of one of the animals can be seen.

In the blow-outs Mr. Jones has found Folsom



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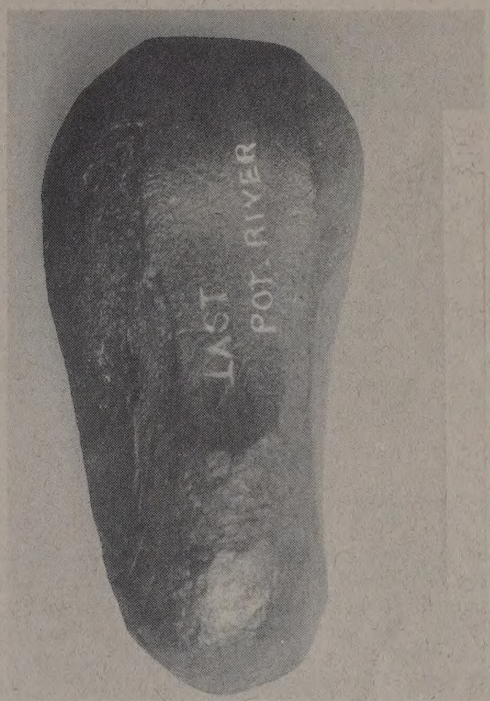

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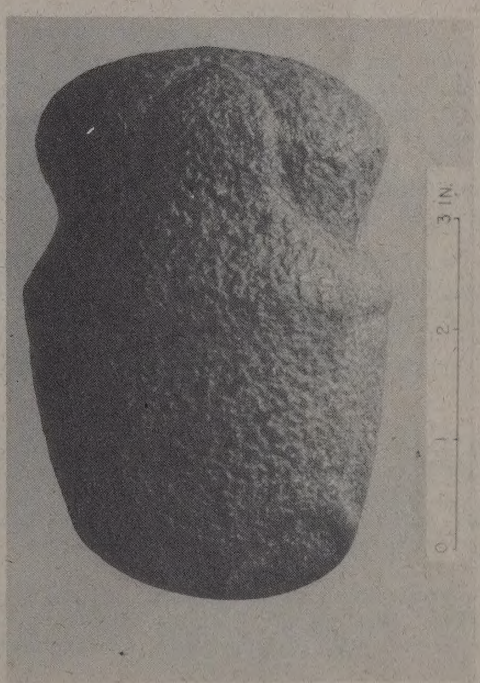

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and Yuma points, and it is likely that some of his other artifacts also belong to those early horizons. Scientists from the Smithsonian Institution have in recent years examined the blow-outs.

****

Moccasin last-

No. 8 in the Hill-O-Graphs plate illustrates what appears to be a stone last for a child's moccasin. It was found by me on the south shore of the Potomac River in 1947, five miles below Alexandria, Virginia. It is made from a reddish sandstone pebble, and the pecking marks of a hammerstone are clearly visible.*

****

Turtle in bas relief-

In my collection is a fully grooved ax from Dade County, Missouri which bears on one face a bas relief figure of a turtle (No. 9 in the Hill-O-Graphs plate). No part of the surface is polished. The rough texture does not suggest pecking marks as much as it does the weathering out of softer particles of the stone. Since the high points are flat surfaces, it is likely that the implement bore a smooth surface originally. The weight is one pound and seven ounces.

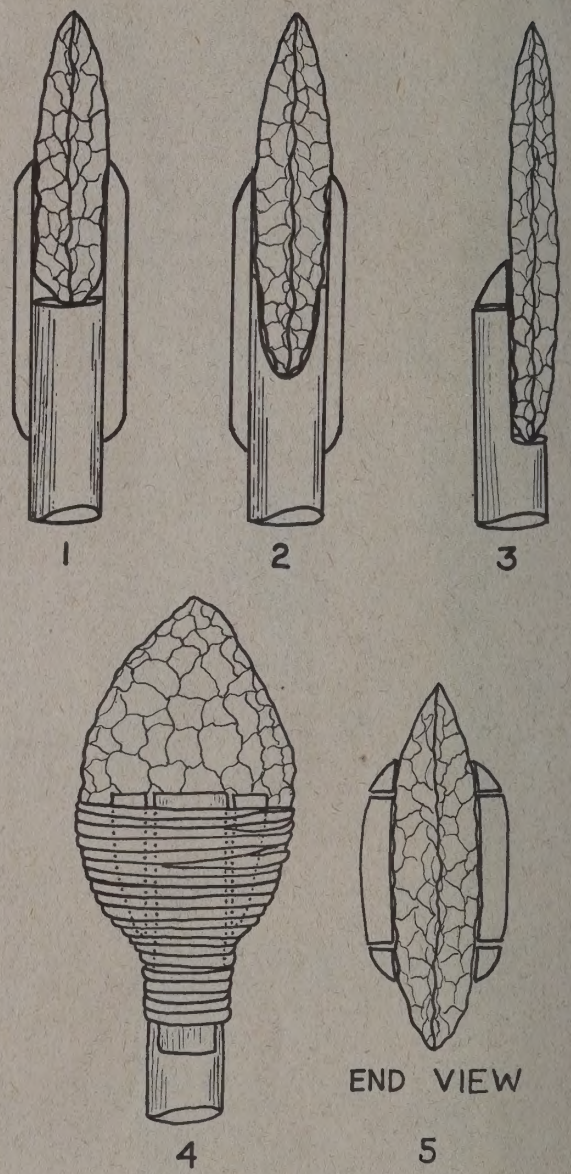
****

What are they--blanks or tools? The many caches of worked, ovate flint objects which have been found in the eastern United States are generally referred to as blanks. Moorehead mentions the finding of 8400 of these large objects in one mound, most of them being four or more inches in diameter and nicely edged all around.

There is good reason to believe that these objects should not be dismissed from further study by simply calling them blanks. I have carried on experiments in an effort to discover a suitable method of hafting these large blades to wooden handles.

Lacking stems, the ordinary method used in hafting a spearhead to a shaft cannot be used. The curvature of the edges and often the excessive thickness of these blades interferes with the usual methods employed in hafting knives or spearheads.

The accompanying illustrations demonstrate three possible ways in which large, thick, ovate blades can be securely attached to a wooden handle for use as a weapon, butchering knife or digging tool. Nos. 1 and 2 might be called splint methods. In No. 1, two flat pieces of wood are lashed to the shaft so as to project beyond its end sufficiently



*Editor's note: Those having similar specimens in their collections are urged to report on them in the Summer Issue of this journal.

to clamp the two faces of the flint. Best results are obtained when the splints are hollowed out sufficiently to adapt themselves to the curvature on the two faces of the blade and shaft. Then lashings are bound on tightly to secure the splints to the shaft and clamp the blade.

No. 2 demonstrates a combined notch and splint method. Here the end of the shaft is notched as far as its thickness will permit without too much weakening.

No. 3 demonstrates a half-notch method in which a longitudinal portion of the end of the shaft is cut away to accommodate the blade. Holding wedges must be inserted when this method is used. This, as well as the other two hafting methods, can be further strengthened by the addition of adhesives. The function of the wedges shown in Nos. 4 and 5 is to equalize the pressure of the lashings which bind the splints to the shaft and blade. These are quite necessary for stable hafting. It is obvious that if the lashings encircle the broadest part of the blade, they will be cut when the implement enters an animal or the ground; hence the blade must be lashed at a point to the rear of its broadest part after fitting the wedges.

By one of the methods outlined above the Indian may have been able to haft his large, stemless ovate blades.

******

BRIEFS

SORRY

that this issue of the TENNESSEE ARCHAEOLOGIST is late. But it is late for a good reason. It seemed advisable to delay it until the master copy could be run on a new typewriter equipped with special gadgets which the manufacturer was late in delivering. The Summer Issue will be run with larger type.

The editors plan to publish three issues of this journal during 1951, provided that the journalistically inclined portion of the membership will assist by contributing articles and news items, and provided that Treasurer Guy Stack can pay the printer.

****

CEREMONIAL AXE DISAPPEARS

Fig. 15 of Plate V pictures an axe of the fully grooved type which was stolen from the University of Tennessee during July, 1949. It is made from a hard igneous rock and is extraordinarily symmetrical. Its length is approximately 9 inches. The fact that the bit was purposely dulled and polished implies that the axe had served a ceremonial usage. If anyone has seen this axe, the Editor will greatly welcome the information.

****

KNOXVILLE CHAPTER MEETING

The March 27 meeting of the Knoxville Chapter of the TAS was attended by twenty-seven people. Mr. J. H. Polhemus of Mascot gave a very interesting account of some of his field trips along the Holston River and exhibited artifacts and sherds from a number of sites. He and Mr. Hugh B. Orton discovered most of the sites by floating down the river in a rubber life raft purchased from Army surplus. Slides of some of the University of Tennessee's field work during 1934 were shown by the Editor; also slides of Wisconsin effigy mounds.

****

The December, 1944 issue of this Journal contained an illustration of the type of card which is used at the University of Tennessee for cataloging archaeological specimens. At the last annual meeting in Nashville requests were made by some new Society members to repeat the illustration.

In the 1944 issue Mr. Elsworth Brown in his article titled "Archaeology in Boy Guidance" made this important statement: "Reckless collecting for mere number of specimens or excellence of appearance, with disregard for authentic labeling data and descriptive notes on the finding sites, is but the natural result when the boy's parents didn't know, or didn't think it mattered."

Most collections in Tennessee contain artifacts which were made by Indian tribes who were very different from each other and who have existed at various times during the past 5000 or more years. So, in order that collections may have some meaning, as good a record as possible should be made concerning the finding or acquiring of each artifact.

In cases where a number of potsherds or arrowheads are found upon the surface at one location, all can be given the same number. Sherds can be filed away in paper sacks and the catalog number written on the sack. One catalog card can be used for all of the arrowheads from a site by simply indicating on it the first number and the last number in the series.

A catalog number should consist of three parts, namely, the number of the site at which the artifact was found, a two-letter abbreviation for the county in which the site is located, and an individual specimen number. The latter series should begin with the number 1 at each site. Similarly, the first site in any county should be given the number 1. If, for instance, artifacts are found at a site in Davidson County, the site should be given the number 1, and the county indicated by the abbreviation Dv The site number and county symbol are written on the artifact with white or black ink thus, 1Dv. Then a line is drawn above the 1Dv and the specimen number added above the line, 1/1Dv. The next specimen from the same site would bear the number 2/1Dv. It is best to coat the number on the specimen with shellac or clear varnish after the ink has dried.

Articles contained in this journal will aid the readers from time to time in determining the prehistoric culture with which many artifacts in Tennessee collections can be identified. For instance, the current article on the Eva culture should enable readers to determine whether certain artifacts in their collections are the products of that ancient people. Articles on other Tennessee cultures will appear in succeeding issues of this journal.

CATALOGUE NO. 115 CULTURE Eva
NAME AND DESCRIPTION
Antler throwing stick hook

STATE Tenn LOCALITY Henry Co.
DATE FOUND OR ACQUIRED 1941
BY WHOM COLLECTED Wm. Jones
FROM WHOM RECEIVED John Smith
GIFT EXCHANGE PURCHASE × COLLECTED

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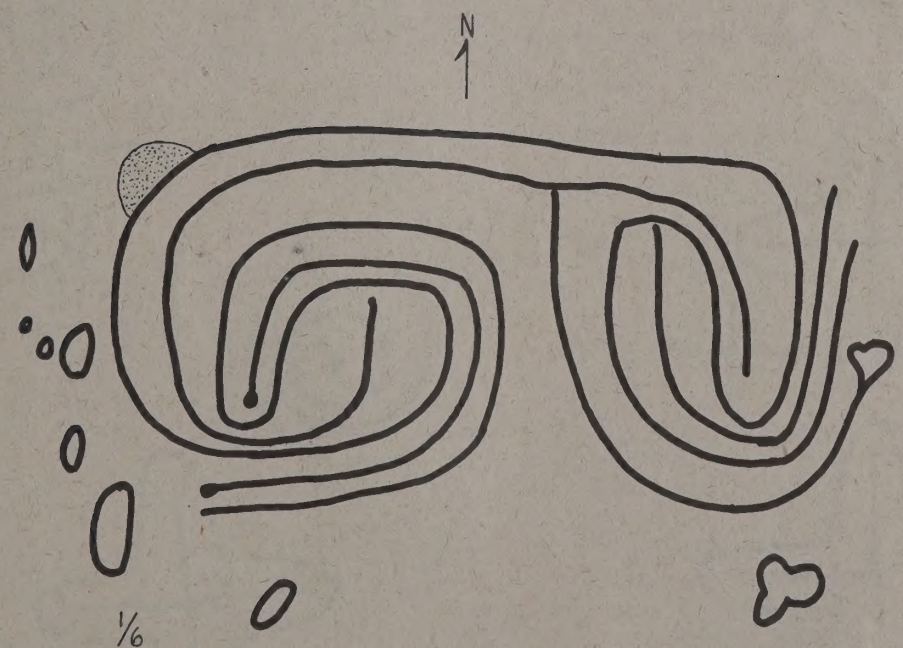
PETROGLYPHS IN GRUNDY COUNTY

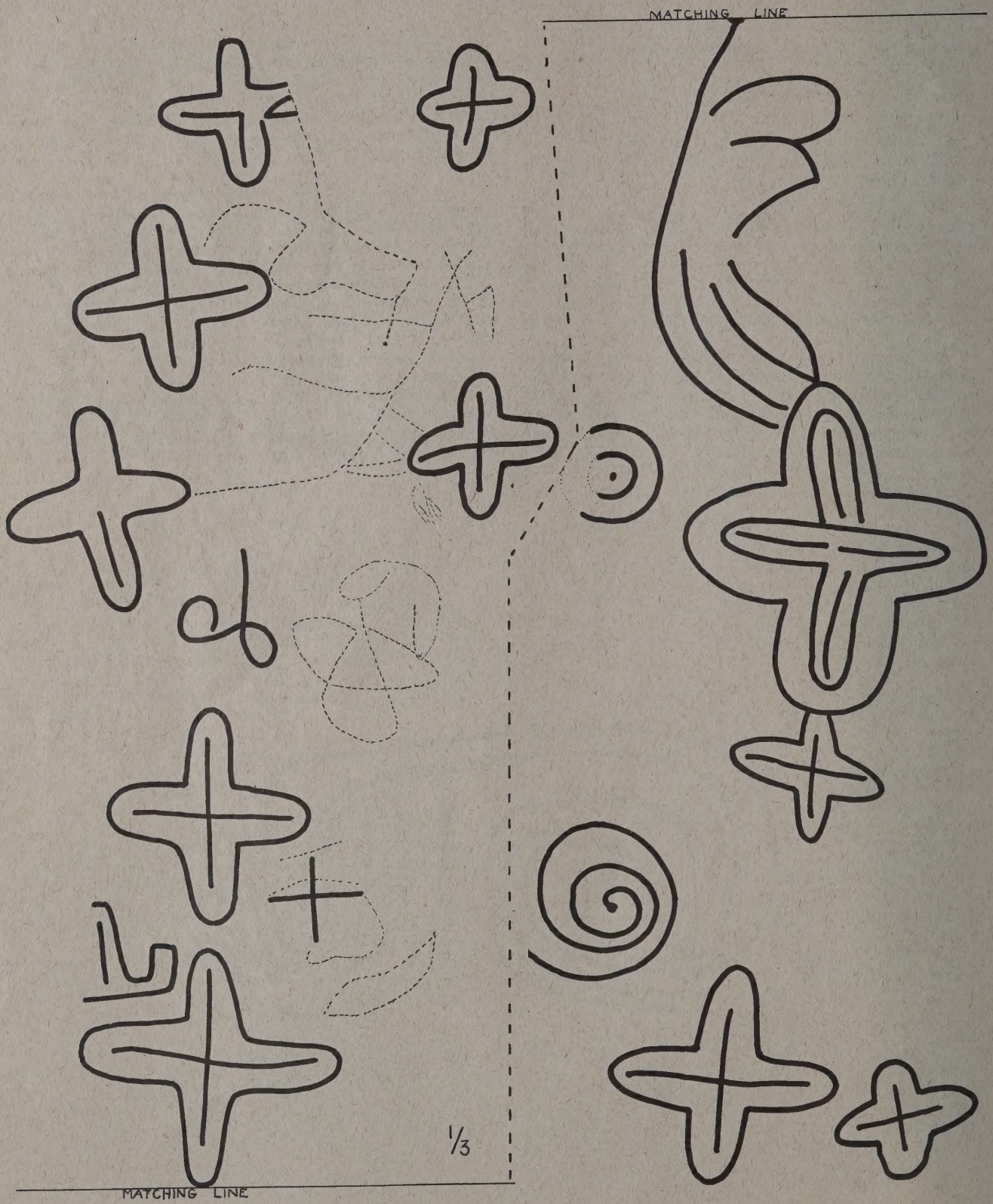
In an isolated, mountainous part of Grundy County, Tennessee a series of rock carvings has been discovered recently. The finder (not a member of the Tennessee Archaeological Society) desires to make further exploration before divulging his name and locations of the carvings.

This person has discovered petroglyphs at three different places in the area so far and believes that more exist. One of these is illustrated below in one-sixth actual size. The lines are deeply carved in sandstone and are very distinct, despite the fact that the rock is exposed to all weather conditions.

On the next page another series of carvings is shown in one-third actual size. These are likewise made in sandstone but are not as well preserved, even though they are somewhat protected from the weather by an overhanging bluff. The broken lines in the drawing may or may not represent portions of the original design. The finder suggests that they might be due to weathering of the rock. This group of carvings is several miles distant from the one illustrated below.

At another location is a carved figure which somewhat resembles a horseshoe, according to our informant. He also states that a carving of a feather has been reported for the same vicinity.




MATCHING LINE
1/3
MATCHING LINE

ANCIENT MAN IN NORTH AMERICA

To those who are interested in learning additional facts about early projectile types, we recommend the book having the above title, by H. M. Wormington. It is obtainable at a nominal price from the Denver Museum of Natural History, Denver, Colorado.

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MUSEUM ROBBERY

The University of Oklahoma Museum was robbed on September 16, 1950 of about fifty prehistoric Indian artifacts and a large quantity of Zuni and Navaho silver jewelry, belts and other items. The Editor of this journal has a descriptive list of the missing material, in case anyone should desire to examine it.

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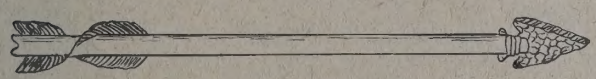
SINGING ARROWS

The Cherokee on the Qualla Reservation offer another explanation for the ubiquitous but comparatively rare beveled arrow point. Dr. H. E. Wheeler of the Museum of the Cherokee Indian has been informed by some of the older men of the tribe that an arrow equipped with this type of point had its feathers set at an angle to conform to the bevel. When shot from a bow, the arrow rotated rapidly and produced a singing sound. These special arrows, the Cherokee say, were used to warn an enemy.



Arthur George Smith of Norwalk, Ohio has expressed in a recent letter to the Editor his doubts that "the Cherokee or their ancestors have used a side-notched, beveled point in five hundred years. At that time our own ancestors were still using the bow. How much of the lore of [Indian] archery has been handed down by word of mouth from those days?

"If three feathers on an arrow are all selected from the same wing, they will spin the arrow, owing to their spiral curvature. If the rear points are not trimmed off, they will make a whirring sound. When properly trimmed, this sound is lacking. The Chinese and Tatars used arrows with a whistling device at the point to scare the enemy."

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REPORT ON 1950 STATE MEETING TENNESSEE ARCHAEOLOGICAL SOCIETY

Meeting held November 5, 1950 at The Children's Museum, Nashville, Tennessee. Sixty-one members and visitors attended.

In the forenoon Mr. Wm. G. Hassler, Director of the Museum, gave an excellent illustrated talk on an ethnological expedition into central Brazil, in which he participated.

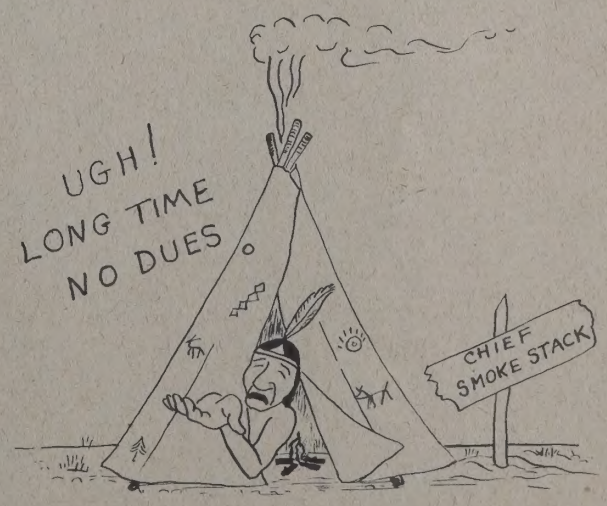
In the afternoon Mr. T. M. N. Lewis of the Department of Anthropology, University of Tennessee, and Miss Madeline Kneberg gave very interesting talks.

Short talks were given by Messrs. W. E. Bundschu, Jr. and LeBaron W. Pahmeyer of the Chattanooga Chapter, and slides of artifacts and sites in the Chattanooga area were shown.

The following officers were elected to serve for 1951:

Franklin Morast	President
Paul J. Fink	Vice-President
Guy Stack	Secretary-Treasurer

FINANCIAL REPORT

Balance brought forward from 1950	$145.79
Annual dues	53.00
Sustaining memberships	10.00
Cash on hand April 3, 1951	$208.79

Guy Stack, Secy.-Treas.